

FIG. 1

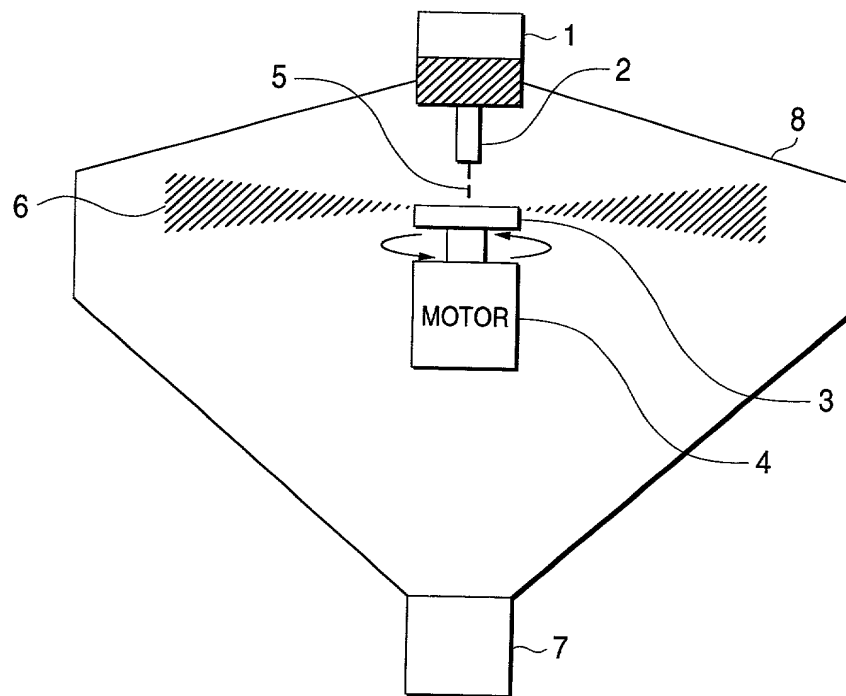


FIG. 2

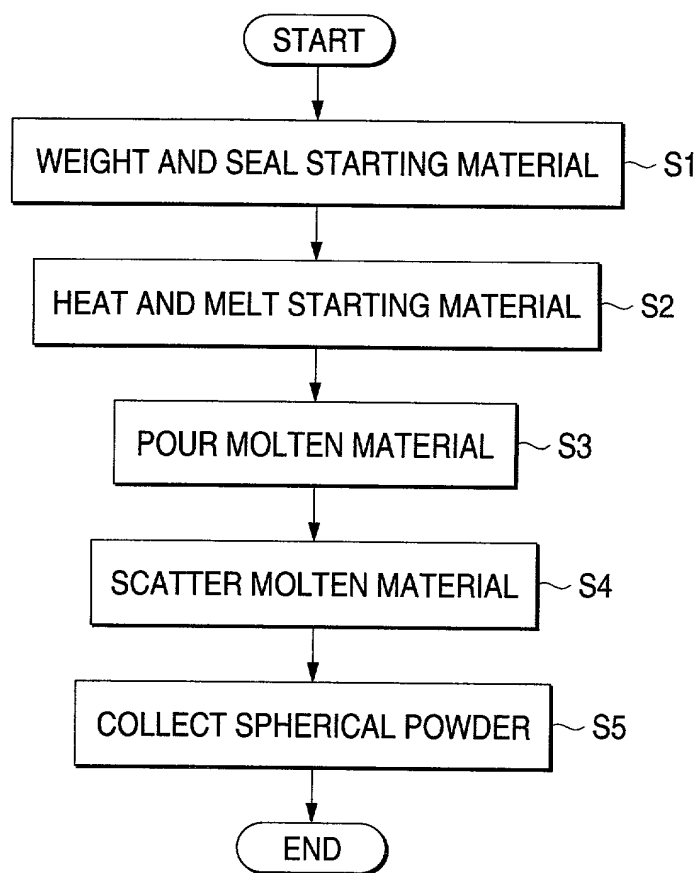
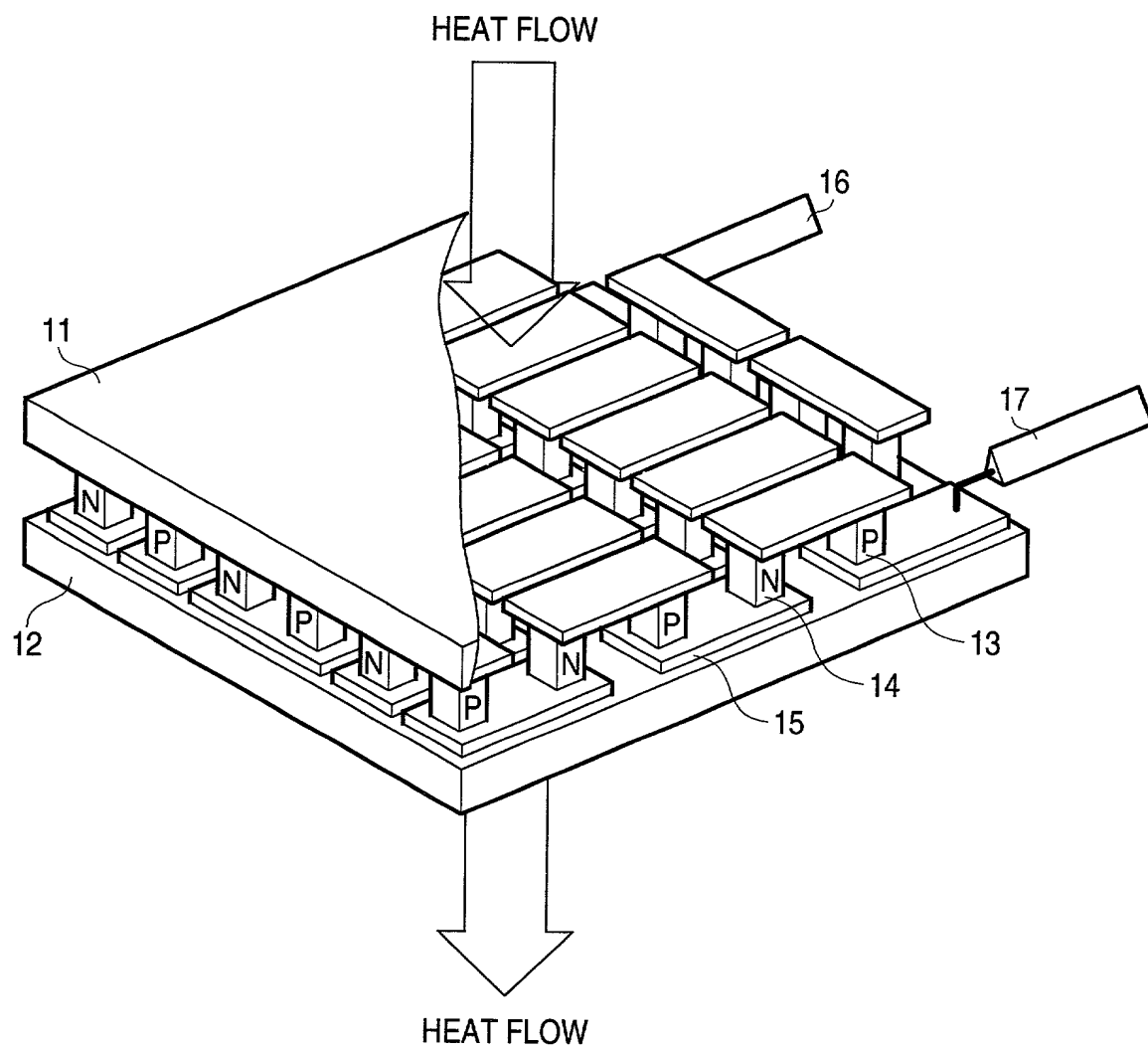
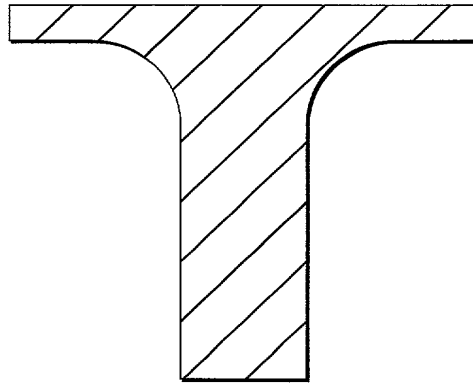


FIG. 3



*FIG. 4A*



*FIG. 4B*

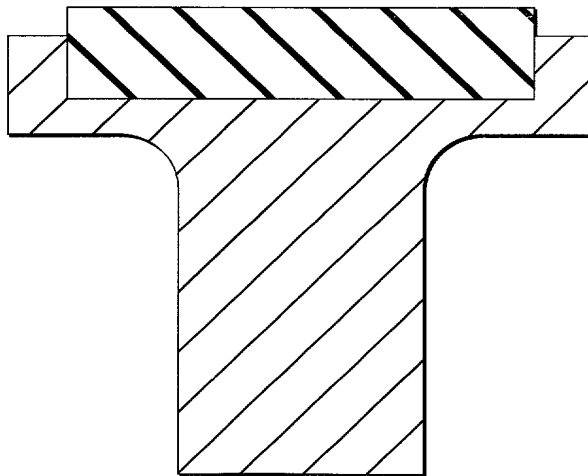


FIG. 5

	MOLTEN MATERIAL COMPOSITION	DISK MATERIAL	SPECIFIC GRAVITY (g/cm <sup>3</sup> )	THERMAL EXPANSION COEFFICIENT (x 10 <sup>-6</sup> /°C)	BENDING STRENGTH (MPa)	OPERATION STABILITY	REACTIVITY	POWDER YIELD	MEAN GRAIN SIZE
EXAMPLE 1	Bi <sub>2</sub> (Te <sub>0.9</sub> Se <sub>0.1</sub> ) <sub>3</sub>	Si <sub>3</sub> N <sub>4</sub>	3.2	2.2	820	○	○	95%	25μm
EXAMPLE 2		SiAlON	3.2	2.2	820	○	○	93%	27μm
EXAMPLE 3	(Bi <sub>0.25</sub> Sb <sub>0.75</sub> ) <sub>2</sub> Te <sub>3</sub>	Si <sub>3</sub> N <sub>4</sub>	3.2	2.2	820	○	○	96%	21μm
EXAMPLE 4		SiAlON	3.2	2.2	820	○	○	95%	22μm
COMPARATIVE EXAMPLE 1	Bi <sub>2</sub> (Te <sub>0.9</sub> Se <sub>0.1</sub> ) <sub>3</sub>	Ti-6Al-4V	4.4	8.4	700	○	×	85%	30μm
COMPARATIVE EXAMPLE 2	(Bi <sub>0.25</sub> Sb <sub>0.75</sub> ) <sub>2</sub> Te <sub>3</sub>	Ti-6Al-4V	4.4	8.4	700	×	×	57%	84μm
COMPARATIVE EXAMPLE 3	Bi <sub>2</sub> (Te <sub>0.9</sub> Se <sub>0.1</sub> ) <sub>3</sub>	BN	1.8	0.3	70	×	○	2%	-
COMPARATIVE EXAMPLE 4	(Bi <sub>0.25</sub> Sb <sub>0.75</sub> ) <sub>2</sub> Te <sub>3</sub>	BN	1.8	0.3	70	×	○	3%	-
COMPARATIVE EXAMPLE 5	Bi <sub>2</sub> (Te <sub>0.9</sub> Se <sub>0.1</sub> ) <sub>3</sub>	GRAPHITE	1.8	4	60	×	○	3%	-
COMPARATIVE EXAMPLE 6	(Bi <sub>0.25</sub> Sb <sub>0.75</sub> ) <sub>2</sub> Te <sub>3</sub>	GRAPHITE	1.8	4	60	×	○	3%	-
COMPARATIVE EXAMPLE 7	Bi <sub>2</sub> (Te <sub>0.9</sub> Se <sub>0.1</sub> ) <sub>3</sub>	BN + Ti HOLDER	4.4	8.4	700	×	○	65%	70μm
COMPARATIVE EXAMPLE 8	(Bi <sub>0.25</sub> Sb <sub>0.75</sub> ) <sub>2</sub> Te <sub>3</sub>	BN + Ti HOLDER	4.4	8.4	700	×	○	58%	73μm
COMPARATIVE EXAMPLE 9	Bi <sub>2</sub> (Te <sub>0.9</sub> Se <sub>0.1</sub> ) <sub>3</sub>	GRAPHITE + Ti HOLDER	4.4	8.4	700	×	○	67%	62μm
COMPARATIVE EXAMPLE 10	(Bi <sub>0.25</sub> Sb <sub>0.75</sub> ) <sub>2</sub> Te <sub>3</sub>	GRAPHITE + Ti HOLDER	4.4	8.4	700	×	○	62%	65μm

OPERATION STABILITY

○ : GOOD (VIBRATION NOT GENERATED)

× : VIBRATION GENERATED (MOTOR OVERLOADED, OR DISK RUPTURED)

REACTIVITY

○ : NO REACTION WITH MOLTEN MATERIAL

× : REACTION CORROSION WITH MOLTEN MATERIAL OBSERVED